

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	39	jp-2003288737-\$.did. or jp-2003257077-\$.did. or jp-2003246140-\$.did. or jp-2003211849-\$.did. or jp-2003154754-\$.did. or jp-2003094819-\$.did. or jp-2003091884-\$.did. or jp-2003091871-\$.did. or jp-2003091867-\$.did. or jp-2003089271-\$.did. or ep-1280142-\$.did. or us-7027382-\$. did. or jp-2002347349-\$.did. or ep-1260973-\$.did. or us-6770346-\$. did. or jp-2002331758-\$.did. or jp-20022740452-\$.did. or us-6790592-\$.did. or jp-2003034081-\$.did. or ep-1193696-\$.did. or jp-2002096560-\$.did. or ep-1056077-\$.did.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/30 12:03

STN;HighlightOn= \*\*\*;HighlightOff=\*\*\* ;

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visualization results  
NEWS 5 FEB 22 The IPC thesaurus added to additional patent databases on STN  
NEWS 6 FEB 22 Updates in EPFULL; IPC 8 enhancements added  
NEWS 7 FEB 27 New STN AnaVist pricing effective March 1, 2006  
NEWS 8 MAR 03 Updates in PATDPA; addition of IPC 8 data without attributes  
NEWS 9 MAR 22 EMBASE is now updated on a daily basis  
NEWS 10 APR 03 New IPC 8 fields and IPC thesaurus added to PATDPAFULL  
NEWS 11 APR 03 Bibliographic data updates resume; new IPC 8 fields and IPC  
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NEWS 13 APR 12 LINSPEC, learning database for INSPEC, reloaded and enhanced  
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NEWS 15 APR 12 Derwent World Patents Index to be reloaded and enhanced during  
second quarter; strategies may be affected  
NEWS 16 MAY 10 CA/CAPLUS enhanced with 1900-1906 U.S. patent records  
NEWS 17 MAY 11 KOREAPAT updates resume  
NEWS 18 MAY 19 Derwent World Patents Index to be reloaded and enhanced  
  
NEWS EXPRESS FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a,  
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
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FILE 'HOME' ENTERED AT 11:50:30 ON 30 MAY 2006

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 11:50:36 ON 30 MAY 2006

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STRUCTURE FILE UPDATES: 29 MAY 2006 HIGHEST RN 885947-35-3

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\*\*\*\*\*  
\*  
\* The CA roles and document type information have been removed from \*  
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\*\*\*\*\*

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on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> s ga 2-6/mac

12763 GA/MAC

434251 2-6/MAC

L1 2918 GA 2-6/MAC

(GA/MAC (P) 2-6/MAC)

=> s ge 1-6/mac

15090 GE/MAC

598090 1-6/MAC

L2 4550 GE 1-6/MAC

(GE/MAC (P) 1-6/MAC)

=> s sb 70-83/mac

18402 SB/MAC

186071 70-83/MAC

L3 1376 SB 70-83/MAC

(SB/MAC (P) 70-83/MAC)

=> s te 5-27/mac

10900 TE/MAC  
489584 5-27/MAC  
L4 2057 TE 5-27/MAC  
(TE/MAC (P) 5-27/MAC)

=> s l1 and l2 and l3 and l4  
L5 31 L1 AND L2 AND L3 AND L4

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

19.92

20.13

FILE 'CAPLUS' ENTERED AT 11:51:40 ON 30 MAY 2006  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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FILE COVERS 1907 - 30 May 2006 VOL 144 ISS 23  
FILE LAST UPDATED: 29 May 2006 (20060529/ED)

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=> s l5  
L6 20 L5

=> d all 1-20

L6 ANSWER 1 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2006:235198 CAPLUS  
DN 144:321611  
ED Entered STN: 16 Mar 2006  
TI Optical recording medium  
IN Sekiguchi, Hiroyoshi; Ito, Kazunori; Deguchi, Hiroshi; Ohkura, Hiroko;  
Kato, Masaki; Abe, Mikiko  
PA Ricoh Company, Ltd., Japan  
SO PCT Int. Appl., 61 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2006028251	A1	20060316	WO 2005-JP16862	20050907
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			

JP 2006079713	A2	20060323	JP 2004-261830	20040909
JP 2006079791	A2	20060323	JP 2004-265778	20040913
PRAI JP 2004-261830	A	20040909		
JP 2004-265778	A	20040913		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2006028251	IPCI	G11B0007-24 [I,A]; G11B0007-243 [I,A]; B41M0005-26 [I,A]
JP 2006079713	IPCI	G11B0007-24 [I,A]; G11B0007-243 [I,A]; B41M0005-26 [I,A]
	FTERM	2H111/EA03; 2H111/EA04; 2H111/EA12; 2H111/EA23; 2H111/EA36; 2H111/EA40; 2H111/FA12; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB21; 2H111/FB30; 5D029/JA01; 5D029/JB18; 5D029/JB35; 5D029/JB47; 5D029/JC04; 5D029/JC06; 5D029/JC18; 5D029/JC20; 5D029/LB07; 5D029/MA14; 5D029/WA02; 5D029/WB11; 5D029/WB17
JP 2006079791	IPCI	G11B0007-258 [I,A]; G11B0007-243 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]; G11B0007-24 [I,A]; B41M0005-26 [I,A]
	FTERM	2H111/EA04; 2H111/EA23; 2H111/EA36; 2H111/EA40; 2H111/FA01; 2H111/FA11; 2H111/FA14; 2H111/FA22; 2H111/FA25; 2H111/FA27; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB12; 2H111/FB21; 2H111/FB30; 5D029/JA01; 5D029/JB35; 5D029/LA14; 5D029/LA17; 5D029/LB07; 5D029/LB11; 5D029/MA13

AB An optical recording medium contains a recording layer being composed of a phase-change recording material where at least four elements, Ga, Sb, Sn and Ge are contained and the transfer linear velocity is 20 m/s to 30 m/s, and when the wavelength of a recording/reproducing light is within the range of 650 nm to 665 nm and the recording linear velocity is 20 m/s to 28 m/s, the refractive index Nc and the extinction coeff. Kc in a cryst. state and the refractive index Na and the extinction coeff. Ka in an amorphous state in the recording layer resp. satisfy the following numerical expressions: 2.0 .ltoreq. Nc .ltoreq. 3.0, 4.0 .ltoreq. Kc .ltoreq. 5.0, 4.0 .ltoreq. Na .ltoreq. 5.0, and 2.5 .ltoreq. Ka .ltoreq. 3.1, and information is recordable at the range of 20 m/s to 28 m/s of recording linear velocity.

ST optical recording medium

IT Optical disks

Optical recording

Optical recording materials  
(optical recording medium)

IT 879375-13-0

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(phase change recording layer; Ga 5optical recording medium contg.)

IT 879375-10-7 879375-11-8 879375-12-9 879375-14-1 879375-15-2

879375-16-3 879375-17-4 879375-18-5 879375-19-6 879375-20-9

879375-21-0 \*\*\*879375-22-1\*\*\* 879375-23-2 879375-24-3

879375-25-4 879375-26-5 879375-27-6 879375-28-7 879375-29-8

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(phase change recording layer; optical recording medium contg.)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Mitsubishi Chemical Corporation; CN 001524264 A 2004 CAPLUS
- (2) Mitsubishi Chemical Corporation; WO 03069602 A1 2004 CAPLUS
- (3) Mitsubishi Chemical Corporation; EP 1475784 A1 2004 CAPLUS
- (4) Mitsubishi Chemical Corporation; US 20040248036 A 2004
- (5) Mitsubishi Chemical Corporation; JP 2004227743 A 2004 CAPLUS
- (6) Ricoh Co Ltd; JP 2002264514 A 2002 CAPLUS
- (7) Ricoh Co Ltd; EP 1260973 A3 2003 CAPLUS
- (8) Ricoh Co Ltd; US 20030012917 A1 2003
- (9) Ricoh Co Ltd; JP 2003305955 A 2003 CAPLUS
- (10) Ricoh Co Ltd; EP 1431966 A2 2004
- (11) Ricoh Co Ltd; US 20040141447 A 2004
- (12) Ricoh Co Ltd; JP 2004199784 A 2004 CAPLUS

DN 139:314564  
 ED Entered STN: 10 Oct 2003  
 TI Erasable phase-change optical recording media for high-speed writing with  
 no initialization required  
 IN Miura, Hiroshi; Shinkai, Masaru; Shibata, Kiyoto; Harigai, Masato;  
 Hanaoka, Katsushige  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-24  
 ICS B41M005-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003288737	A2	20031010	JP 2002-130158	20020501
PRAI	JP 2002-17389	A	20020125		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003288737	ICM	G11B007-24
	ICS	B41M005-26
	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]

AB The recording medium has (A) a recording layer contg. Sb, Te, and  
 optionally other elements selected from Group I to VII and (B) other  
 layers contg. crystn. accelerators, wherein the crystn. accelerators  
 diffuse into the recording layer by energy irradiation of writing processes.  
 ST phase change optical disk initialization free; erasable optical recording  
 medium antimony telluride

IT Erasable optical disks  
 (erasable phase-change optical disks for high-speed writing with no  
 initialization required)

IT 610269-84-6 610269-85-7 610269-86-8 610269-87-9 610269-88-0  
 610269-89-1

RL: DEV (Device component use); USES (Uses)  
 (crystn. accelerating layer contg.; erasable phase-change optical disks  
 for high-speed writing with no initialization required)

IT \*\*\*610269-91-5\*\*\* 610269-92-6 610269-93-7 610269-94-8  
 610269-95-9 610269-96-0 610269-97-1 610269-98-2

RL: DEV (Device component use); FMU (Formation, unclassified); FORM  
 (Formation, nonpreparative); USES (Uses)

(formed by recording processes; erasable phase-change optical disks for  
 high-speed writing with no initialization required)

IT 124307-63-7, Antimony 80, tellurium 20 (atomic) 610269-90-4

RL: DEV (Device component use); USES (Uses)  
 (recording layer; erasable phase-change optical disks for high-speed  
 writing with no initialization required)

IT 7440-42-8, Boron, uses 7440-44-0, Carbon, uses 7440-74-6, Indium, uses  
 7727-37-9, Nitrogen, uses

RL: DEV (Device component use); USES (Uses)  
 (recording stabilizer; erasable phase-change optical disks for  
 high-speed writing with no initialization required)

L6 ANSWER 3 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:715803 CAPLUS  
 DN 139:237789

ED Entered STN: 12 Sep 2003  
 TI Phase change rewritable optical recording media  
 IN Tashiro, Hiroko; Kageyama, Yoshiyuki; Harigai, Masato; Suzuki, Eiko;  
 Yuzuhara, Hajime; Miura, Hiroshi; Mizutani, Miki; Ito, Kazunori; Onagi,  
 Nobuaki  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 14 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003257077	A2	20030912	JP 2002-59280	20020305
PRAI	JP 2002-59280		20020305		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003257077	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,7]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C*]

AB The title recording medium has a phase change recording layer mainly made of Sb and Te on a substrate, wherein the recording layer has x-ray diffraction peaks at 2.14.+-.0.03 and 2.21.+-.0.03 (.ANG.) lattice distance, and one of the position chosen from 3.09.+-.0.03, 1.75.+-.0.03, 1.54.+-.0.03, and 1.37.+-.0.03. The medium is suitable for high linear and high d. recording and shows good characteristics on the repeated recording and data storageability.

ST phase rewritable optical recording media

IT Optical recording materials  
(phase change; phase change optical recording media)

IT 594866-17-8 594866-18-9 594866-19-0 594866-20-3 594866-21-4  
594866-22-5 \*\*\*594866-23-6\*\*\* 594866-24-7 594866-25-8  
594866-26-9 594866-27-0 594866-28-1 594866-29-2  
RL: DEV (Device component use); USES (Uses)  
(recording layer of phase change optical recording media)

L6 ANSWER 4 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:685863 CAPLUS

DN 139:221674

ED Entered STN: 03 Sep 2003

TI Phase-changeable optical recording material containing antimony and tellurium

IN Harigai, Masato; Tani, Katsuhiko; Tashiro, Hiroko; Iwata, Kaneyuki; Yuzuhara, Hajime; Suzuki, Eiko; Mizutani, Miki; Onagi, Nobuaki; Miura, Hiroshi; Ito, Kazunori; Kageyama, Yoshiyuki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26

ICS G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003246140	A2	20030902	JP 2002-47503	20020225
PRAI	JP 2002-47503		20020225		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003246140	ICM	B41M005-26
	ICS	G11B007-24
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]

AB In the material recorded and read by phase change between crystal and amorphous phase caused electromagnetic beam irradiation, the recording layer contains Sb, Te, and elements A and B, in which local structures around A are almost the same and that around B are different before and after the phase change. The material is suited for high linear seed and high d. recording and shows good durability and storage stability.

ST optical recording material antimony tellurium; phase change optical recording material local structure

IT Optical recording materials  
(phase-changeable optical recording material containing antimony and tellurium)

IT \*\*\*590374-45-1\*\*\* 590374-46-2 590374-47-3 590374-48-4

590374-49-5 590374-50-8 590374-51-9 590374-52-0 590374-53-1

590374-54-2

RL: DEV (Device component use); USES (Uses)

(phase-changeable optical recording material contg. antimony and tellurium)

L6 ANSWER 5 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:582231 CAPLUS

DN 139:141024

ED Entered STN: 30 Jul 2003

TI Phase-changeable optical recording material containing germanium, gallium, manganese, antimony, and tellurium

IN Miura, Hiroshi; Harigai, Masato; Yuzuhara, Hajime; Kageyama, Yoshiyuki; Suzuki, Eiko; Tashiro, Hiroko; Mizutani, Miki; Abe, Mikiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26

ICS G11B007-0055; G11B007-24; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003211849	A2	20030730	JP 2002-16903	20020125
PRAI	JP 2002-16903		20020125		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003211849	ICM	B41M005-26
	ICS	G11B007-0055; G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-0055 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-00 [I,C*]; G11B0007-0055 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]

AB The material, recorded by phase change from crystal to amorphous caused by light irradsn., comprises Ge.alpha.Ga.beta.Mn.gamma.Sb.delta.Te.epsilon. [ .alpha. + .beta. + .gamma. + .delta. + .epsilon. = 100 (at.%) ] satisfies  $0 < .alpha. .ltoreq. 7$ ,  $0 < .beta. .ltoreq. 7$ ,  $.gamma. = 5-10$ ,  $.delta. = 60-70$ ,  $.epsilon. = 15-25$ . The material is suited for high speed over-wiring, shows durability in repeated writing and storage stability.

ST germanium gallium manganese antimony tellurium optical recording material

IT Optical recording materials

(phase-changeable optical recording material contg. germanium, gallium, manganese, antimony, and tellurium)

IT 7440-21-3, Silicon, uses \*\*\*565462-62-6\*\*\* 565462-64-8  
\*\*\*565462-66-0\*\*\*

RL: DEV (Device component use); USES (Uses)

(phase-changeable optical recording material contg. germanium, gallium, manganese, antimony, and tellurium)

IT 7440-22-4, Silver, uses 11106-92-6

RL: DEV (Device component use); USES (Uses)

(reflection layer; phase-changeable optical recording material contg. germanium, gallium, manganese, antimony, and tellurium)

IT 1314-23-4, Zirconia, uses 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses

RL: DEV (Device component use); USES (Uses)

(thin layer; phase-changeable optical recording material contg. germanium, gallium, manganese, antimony, and tellurium)

L6 ANSWER 6 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:403587 CAPLUS

DN 138:409443

ED Entered STN: 27 May 2003

TI Phase-changeable optical recording material

IN Mizutani, Miki; Kageyama, Yoshiyuki; Harigai, Masato; Yuzuhara, Hajime; Suzuki, Eiko; Miura, Hiroshi; Tashiro, Hiroko; Abe, Mikiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003154754	A2	20030527	JP 2001-358365	20011122
PRAI	JP 2001-358365		20011122		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003154754	ICM	B41M005-26
	ICS	G11B007-24
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]

AB The material, recorded by reversible phase change between crystal and amorphous phase caused by laser irradiation, contains Ge.alpha.Ga.beta.Cu.gamma.Sb.delta.Te.epsilon. [.alpha., .beta., .gamma., .delta., .epsilon. are at.% of the element; .alpha. = 0-5; .beta. = 1-5; .gamma. = 1-10; .delta. = 65-81; .epsilon. = 13-24; .alpha. + .beta. + .gamma. + .delta. + .epsilon. = 100]. The material shows good recording and erasing property on high linear velocity recording.  
 ST phase change optical recording material; germanium gallium copper antimony tellurium optical recording material  
 IT Optical recording materials  
 (phase-changeable optical recording material)  
 IT 528878-57-1 528878-58-2 \*\*\*528878-59-3\*\*\* 528878-60-6  
 \*\*\*528878-62-8\*\*\* 528878-63-9 528878-64-0 \*\*\*528878-65-1\*\*\*  
 RL: DEV (Device component use); USES (Uses)  
 (phase-changeable optical recording material)

L6 ANSWER 7 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:257547 CAPLUS  
 DN 138:278496  
 ED Entered STN: 03 Apr 2003  
 TI Rewritable phase change optical recording medium made from antimony tellurium-based alloy and sputtering target for the optical recording medium  
 IN Nakamura, Yuki; Kato, Masaki; Shimofuku, Hikaru  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS G11B007-24; G11B007-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 56  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003094819	A2	20030403	JP 2001-289871	20010921
PRAI	JP 2001-289871		20010921		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003094819	ICM	B41M005-26
	ICS	G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]

AB The title optical recording medium comprises a 1st dielec. layer, a recording layer, a 2nd dielec. layer, a metal or alloy layer, and a

UV-curable resin layer in the order formed on a disk substrate, wherein the recording layer is made of X.alpha.Y.beta.Z.gamma.Sb.delta.Te.epsilon. (X = Si, Ge; Y = Ag, Bi; Z = Ga, In; .alpha., .beta., .gamma., .delta., and .epsilon. are in at.%; .alpha. + .beta. + .gamma. + .delta. + .epsilon. > 0.98; 0.5 < .alpha. < 0.5; 0.1 < .beta. < 0.5; 1.1 < .gamma. < 1.5; 65.1 < .delta. < 80; 15.1 < .epsilon. < 25; and 85 < .delta. + .epsilon. < 95). The 2nd dielec. layer is made up of .gtoreq.1 layers, in which the layer adjacent to the recording layer contains oxides, sulfides, or a mixt. thereof of elements selected from Al, Si, Ta, Ti, Zn, Y, Zr, Nb, V, Mg, Sn, and W and the layer adjacent to the metal layer contains a carbide of Si, Ti, W, or Zr, or a mixt thereof. The metal layer is based on Ag which contains .gtoreq.1 element selected from Au, Pt, Pd, Ru, Ti, and Cu. The sputtering target having above compn. is also claimed.

ST rewritable phase change optical recording disk sputtering target; antimony tellurium optical recording layer

IT Sputtering targets  
(Sb/Te-based alloy sputtering target for manuf. of rewritable phase change optical recording disk)

IT Optical recording materials  
(rewritable phase change optical recording disk from Sb/Te-based alloy)

IT 409-21-2, Silicon carbide, uses 1314-23-4, Zirconia, uses 1314-98-3, Zinc sulfide, uses 1344-28-1, Alumina, uses 7440-22-4, Silver, uses 7631-86-9, Silica, uses 12070-08-5, Titanium carbide 13463-67-7, Titania, uses 51878-21-8 99587-35-6 133580-32-2 148026-71-5 503540-37-2

RL: DEV (Device component use); USES (Uses)  
(rewritable phase change optical recording disk)

IT \*\*\*503540-31-6\*\*\* 503540-32-7 503540-33-8 503540-34-9  
503540-35-0 503540-36-1

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(rewritable phase change optical recording disk and sputtering target)

L6 ANSWER 8 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:240228 CAPLUS

DN 138:262765

ED Entered STN: 28 Mar 2003

TI Erasable optical recording material with controlled initialization energy and reflectivity

IN Kato, Masaki; Nakamura, Yuki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-26  
ICS B41M005-26; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 73

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003091884	A2	20030328	JP 2001-286149	20010920
PRAI JP 2001-286149		20010920		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003091884	ICM	G11B007-26
	ICS	B41M005-26; G11B007-24
	IPCI	G11B0007-26 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-24 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]

AB In the material comprising a transparent support coated with a recording layer mainly contg. Ga, Sb, and Te, and optically recorded, read, and erased, the reflectivity of the material (R) changes according to the radiation energy d. for initialization (E), R shows discreet value in the range of E1 < E < E2, and the material is initialized at E < E1. The initial state of the material is optimized and the material shows good

over-writability at high speed.  
ST erasable optical recording material; initialization energy reflectivity  
optical recording material; antimony gallium tellurium optical recording  
layer  
IT Optical recording materials  
(erasable; erasable optical recording material with controlled  
initialization energy and reflectivity)  
IT \*\*\*502447-94-1\*\*\*  
RL: DEV (Device component use); USES (Uses)  
(recording layer; erasable optical recording material with controlled  
initialization energy and reflectivity)  
IT 11106-92-6  
RL: DEV (Device component use); USES (Uses)  
(reflection layer; erasable optical recording material with controlled  
initialization energy and reflectivity)

L6 ANSWER 9 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:240225 CAPLUS  
DN 138:278493  
ED Entered STN: 28 Mar 2003  
TI Phase-changeable optical recording material with protective layer  
containing zirconium oxide  
IN Miura, Hiroshi; Suzuki, Eiko; Tashiro, Hiroko; Mizutani, Miki; Harigai,  
Masato; Yuzuhara, Hajime; Onagi, Nobuaki; Kageyama, Yoshiyuki  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24; B41M005-26; G11B007-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 73

FAN.CNT 1  
PATENT NO. KIND DATE APPLICATION NO. DATE  
-----  
PI JP 2003091871 A2 20030328 JP 2001-283908 20010918  
PRAI JP 2001-283908 20010918

CLASS  
PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES  
-----  
JP 2003091871 ICM G11B007-24  
ICS G11B007-24; B41M005-26; G11B007-26  
IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26  
[ICS,7]; G11B0007-26 [ICS,7]  
IPCR B41M0005-26 [I,A]; B41M0005-26 [I,C\*]; G11B0007-24  
[I,A]; G11B0007-24 [I,C\*]; G11B0007-26 [I,A];  
G11B0007-26 [I,C\*]

AB The material comprises a transparent support successively coated with 1st  
protective layer, a phase-changeable recording layer, 2nd protective layer  
mainly contg. Zr oxide, and a reflection layer, and recorded and read by  
laser beam using reversible change between amorphous and crystal phase.  
As the crystn. of the recording layer is increased, the material has large  
recording capacity and recorded by 7-17 m/s linear velocity.

ST phase changeable optical recording material; zirconium oxide protective  
layer optical recording material  
IT Optical recording materials  
(phase-changeable optical recording material with protective layer  
contg. zirconium oxide)  
IT 1314-23-4, Zirconium oxide, uses 111346-16-8, Titanium zirconium oxide  
(Ti0.2Zr0.8O2) 172227-09-7, Titanium yttrium zirconium oxide  
(Ti0.2Y0.06Zr0.77O2.03) 503177-64-8, Zinc zirconium oxide sulfide  
(Zn0.2Zr0.8O1.6S0.2) 503177-69-3, Magnesium titanium zirconium oxide  
(Mg0.03Ti0.2Zr0.77O1.97) 503177-70-6, Calcium titanium zirconium oxide  
(Ca0.03Ti0.2Zr0.77O1.97) 503177-71-7, Cerium titanium zirconium oxide  
(Ce0.03Ti0.2Zr0.77O1.97)  
RL: DEV (Device component use); USES (Uses)  
(protective layer; phase-changeable optical recording material with  
protective layer contg. zirconium oxide)  
IT \*\*\*503177-63-7\*\*\* 503177-65-9 \*\*\*503177-66-0\*\*\*  
\*\*\*503177-67-1\*\*\* 503177-68-2

RL: DEV (Device component use); USES (Uses)  
 (recording layer; phase-changeable optical recording material with  
 protective layer contg. zirconium oxide)  
 IT 7440-22-4, Silver, uses  
 RL: DEV (Device component use); USES (Uses)  
 (reflection layer; phase-changeable optical recording material with  
 protective layer contg. zirconium oxide)

L6 ANSWER 10 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:240222 CAPLUS  
 DN 138:262761  
 ED Entered STN: 28 Mar 2003  
 TI Phase changeable optical recording material with silver reflection layer  
 IN Yamada, Katsuyuki; Narumi, Shinya  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-24  
 ICS G11B007-24; B41M005-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 73  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003091867	A2	20030328	JP 2001-283993	20010918
JP 2001-283993		20010918		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003091867	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]

AB The material, comprising a substrate successively coated with an under  
 protective layer, an optical recording layer, an upper protective layer  
 with thickness D(TL), and a reflection layer comprising Ag (purity  
 .gtoreq.99%) with thickness D(Ag), satisfies that (1) 5 .times. D(TL)  
 .ltoreq. D(Ag) .ltoreq. 15 .times. D(TL), (2) the main component of the  
 recording layer comprises an alloy A.alpha.B.beta.Sb.gamma.Te.delta. (A =  
 Ag and/or Ge; B = In and/or Ga and/or Bi; .alpha., .beta., .gamma.,  
 .delta. = at. %) satisfying 0.001 .ltoreq. .alpha./(.alpha. + .beta. +  
 .gamma. + .delta.) .ltoreq. 0.05, 0.01 .ltoreq. .beta./(.alpha. + .beta. +  
 .gamma. + .delta.) .ltoreq. 0.10, 0.65 .ltoreq. .gamma./(.alpha. + .beta. +  
 .gamma. + .delta.) .ltoreq. 0.85, 0.10 .ltoreq. .delta./(.alpha. + .beta. +  
 .gamma. + .delta.) .ltoreq. 0.27, .beta./alpha. .gtoreq. 1, and (3) upper  
 limit of recrystn. linear velocity of the recording layer (V) is 7-12 m/s.  
 In the material, V may be 14-21 m/s. The material shows good storage  
 stability and is suited for high multi-speed recording.

ST phase change optical recording material; silver reflection layer optical  
 recording material; antimony tellurium silver germanium indium gallium  
 bismuth

IT Optical recording materials  
 (phase changeable optical recording material with silver reflection  
 layer)

IT Optical ROM disks  
 (rewritable; phase changeable optical recording material with silver  
 reflection layer)

IT 7440-22-4, Silver, uses  
 RL: DEV (Device component use); USES (Uses)  
 (phase changeable optical recording material with high purity silver  
 reflection layer)

IT 502454-85-5 \*\*\*502454-86-6\*\*\*  
 RL: DEV (Device component use); USES (Uses)  
 (recording layer; phase changeable optical recording material with high  
 purity silver reflection layer)

L6 ANSWER 11 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:227604 CAPLUS  
 DN 138:262757  
 ED Entered STN: 25 Mar 2003  
 TI Rewritable phase change-type optical information recording medium  
 IN Yamada, Katsuyuki  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003089271	A2	20030325	JP 2001-285558	20010919
PRAI	JP 2001-285558		20010919		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003089271	ICM	B41M005-26
	ICS	G11B007-24
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]

AB The title optical information recording medium comprises a phase change-type recording layer is made from 5 elements, i.e., (.alpha.) Ag and/or Ge, (.beta.) In and/or Ga and/or Bi, (.gamma.) Sb, (.delta.) Te, and (.epsilon.) Al and/or Si and/or Fe so as to satisfy the following conditions:  $0.001 < \frac{\alpha}{\alpha + \beta + \gamma + \delta + \epsilon} < 0.07$ ,  $0.01 < \frac{\beta}{\alpha + \beta + \gamma + \delta + \epsilon} < 0.15$ ,  $0.61 < \frac{\gamma}{\alpha + \beta + \gamma + \delta + \epsilon} < 0.85$ ,  $0.20 < \frac{\delta}{\alpha + \beta + \gamma + \delta + \epsilon} < 0.30$ , and  $0.000001 < \frac{\epsilon}{\alpha + \beta + \gamma + \delta + \epsilon} < 0.001$ . The recording layer may contain GeTe. or GaTe crystal. The title recording medium exhibited high speed recording capability and an improved oxidn. resistance.

ST rewritable phase change optical information recording disk

IT Optical recording materials

(rewritable phase change-type optical information recording medium)

IT 12687-64-8, Gallium telluride 52503-00-1, Germanium telluride

406496-53-5 \*\*\*502695-70-7\*\*\*

RL: DEV (Device component use); USES (Uses)

(rewritable phase change-type optical information recording medium)

L6 ANSWER 12 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:23414 CAPLUS

DN 138:98265

ED Entered STN: 10 Jan 2003

TI Optical information recording medium and information recording method using the recording medium

IN Yamada, Katsuyuki; Narumi, Shinya

PA Ricoh Company, Ltd., Japan

SO U.S. Pat. Appl. Publ., 13 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM G11B007-24

ICS G11B007-26

INCL 430270130; 369059110; 369275400; 369288000; 430945000; 430275100; 428064400

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003008236	A1	20030109	US 2002-179101	20020624
	US 7027382	B2	20060411		
	JP 2003006925	A2	20030110	JP 2001-193779	20010626

JP 2003006928	A2	20030110	JP 2001-193780	20010626
EP 1280142	A1	20030129	EP 2002-254436	20020625
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CN 1396591	A	20030212	CN 2002-124419	20020626
PRAI JP 2001-193779	A	20010626		
JP 2001-193780	A	20010626		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003008236	ICM	G11B007-24
	ICS	G11B007-26
	INCL	430270130; 369059110; 369275400; 369288000; 430945000; 430275100; 428064400
	IPCI	G11B0007-24 [I,A]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-243 [I,A]; G11B0007-258 [I,A]
	NCL	430/270.130
	ECLA	G11B007/24; G11B007/243; G11B007/258
JP 2003006925	IPCI	G11B0007-24 [ICM,7]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C*]
JP 2003006928	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C*]
EP 1280142	IPCI	G11B0007-24 [ICM,7]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-243 [I,A]; G11B0007-258 [I,A]
	ECLA	G11B007/24; G11B007/243; G11B007/258
CN 1396591	IPCI	G11B0007-24 [ICM,7]; G11B0011-00 [ICS,7]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-243 [I,A]; G11B0007-258 [I,A]

AB An optical information recording medium includes a substrate, a light absorbing layer which is located overlying the substrate and in which marks are formed to store information and a light reflection layer located overlying the light absorbing layer including a crystal. The optical information recording medium satisfies the relationship:  

$$L_t/4.l_t \leq L_c \leq L_m$$
(Lc = the av. particle diam. of the crystal of the light reflection layer; Lm = min. length of the marks; Lt = thickness of the light reflection layer).

ST optical information recording reflective protective absorbing layer

IT Optical recording materials  
(erasable; optical information recording medium and method)

IT Polycarbonates, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(substrate; optical information recording medium and method contg.)

IT \*\*\*483348-34-1\*\*\* 483348-35-2 483348-36-3  
RL: DEV (Device component use); USES (Uses)  
(light absorbing layer; optical information recording medium and method contg.)

IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-92-1, Lead, uses 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses 7440-36-0, Antimony, uses 7440-43-9, Cadmium, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses  
RL: DEV (Device component use); USES (Uses)  
(light reflection layer; optical information recording medium and method contg.)

IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(protective layer; optical information recording medium and method contg.)

L6 ANSWER 13 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:921304 CAPLUS

DN 138:18111

ED Entered STN: 04 Dec 2002

TI Sputtering target and optical recording medium obtained by using it  
IN Suzuki, Eiko; Kageyama, Yoshiyuki; Harigai, Masato; Tashiro, Hiroko; Miura, Hiroshi; Yuzuhara, Hajime; Ito, Kazunori; Onagi, Nobuaki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM B41M005-26  
ICS G11B007-006; G11B007-24; G11B007-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002347349	A2	20021204	JP 2001-164792	20010531
PRAI	JP 2001-79830	A	20010321		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002347349	ICM	B41M005-26
	ICS	G11B007-006; G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-006 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-00 [I,C*]; G11B0007-006 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]

AB The target has a compn. .gtoreq.0.9 (at. ratio) of which is represented by X.alpha.Sb.beta.Te.gamma. (X = In and/or Ga; .alpha. = 0.01-0.1; .beta. = 0.60-0.90; .gamma. = 1 - .alpha. - .beta.). Optical recording medium having a recording layer obtained by using the target is also claimed. When laser beam with intensity 8-15 times reprodn. power is irradiated to the rotating recording medium, the recording layer is in crystal state at rotational linear velocity .ltoreq.7 m/s (or .ltoreq.16 m/s) and starts to become amorphous at 7-16 m/s (or 16-20 m/s). The recording medium is suitable for high linear velocity recording and has high capacity (equal to or higher than DVD-ROM), storage stability, and excellent overwrite performance.

ST sputtering target optical recording medium linear velocity; gallium antimony tellurium sputtering target optical recording; indium antimony tellurium alloy sputtering target optical recording

IT Optical disks  
Optical recording materials  
Sputtering targets

(sputtering target for recording layer of optical recording medium for high linear velocity recording and storage stability)

IT 405114-43-4, Antimony 70, gallium 6, tellurium 24 (atomic) 405114-44-5, Antimony 70, gallium 6, silver 3, tellurium 21 (atomic)  
\*\*\*405114-45-6\*\*\* , Antimony 70, gallium 6, germanium 3, tellurium 21 (atomic) \*\*\*405114-46-7\*\*\* , Antimony 70, gallium 6, germanium 3, silver 1, tellurium 20 (atomic) 477572-04-6, Antimony 66, gallium 5, tellurium 29 (atomic) 477572-05-7, Antimony 65, gallium 5, germanium 3, tellurium 27 (atomic) 477572-06-8, Antimony 64, gallium 5, germanium 3, silver 2, tellurium 26 (atomic) 477572-07-9 477572-08-0, Antimony 78, gallium 5, tellurium 17 (atomic) \*\*\*477572-09-1\*\*\* , Antimony 77, gallium 5, germanium 3, tellurium 15 (atomic) \*\*\*477572-10-4\*\*\* , Antimony 76, gallium 5, germanium 3, silver 2, tellurium 14 (atomic) 477572-11-5, Antimony 82, germanium 3, indium 5, silver 2, tellurium 8 (atomic)

RL: TEM (Technical or engineered material use); USES (Uses)

(sputtering target for recording layer of optical recording medium for high linear velocity recording and storage stability)

L6 ANSWER 14 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:904454 CAPLUS

DN 138:9714

ED Entered STN: 29 Nov 2002

TI Optical recording medium and recording method

IN Harigaya, Makoto; Miura, Hiroshi; Okura, Hiroko; Mizutani, Miku; Hibino, Eiko; Yuzurihara, Hajime; Kageyama, Yoshiyuki; Abe, Mikiko; Deguchi, Hiroshi; Ito, Kazunori

PA Ricoh Company Ltd., Japan

SO Eur. Pat. Appl., 32 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1260973	A2	20021127	EP 2002-11189	20020521
	EP 1260973	A3	20030716		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003305955	A2	20031028	JP 2002-113269	20020416
	US 2003012917	A1	20030116	US 2002-151324	20020520
	US 6770346	B2	20040803		
PRAI	JP 2001-151129	A	20010521		
	JP 2001-290036	A	20010921		
	JP 2002-35131	A	20020213		
	JP 2002-113269	A	20020416		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1260973	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,6]
	IPCR	G11B0007-24 [I,C*]; G11B0007-243 [I,A]
	ECLA	G11B007/243
JP 2003305955	IPCI	B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7]; G11B0007-006 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-125 [ICS,7]; G11B0007-24 [ICS,7]
	IPCR	G11B0007-24 [I,C*]; G11B0007-243 [I,A]
US 2003012917	IPCI	B32B0003-02 [ICM,7]
	IPCR	G11B0007-24 [I,C*]; G11B0007-243 [I,A]
	NCL	428/064.400
	ECLA	G11B007/243

AB An optical recording medium is described comprising a recording layer  
 contg. a phase-change recording material causing a reversible phase change  
 between a cryst. phase and an amorphous phase by irradiation with an  
 electromagnetic wave, wherein the phase change material mainly comprises  
 materials expressed by the compn. formula X:Ge:Mn:Sb:Te  
 (.alpha.:.beta.:.gamma.:.delta.:.epsilon.) with each of the components  
 resp. fulfills .alpha. = 0-5, .beta. = 1-5, .gamma. = 1-10, .delta. =  
 65-80, .epsilon. = 15-25, and .alpha. .ltoreq. .gamma. (X = Ga, Sn;  
 .alpha., .beta., .gamma., .delta., .epsilon. expresses at.%, and .alpha. +  
 .beta. + .gamma. + .delta. + .epsilon. = 100). A method for recording to  
 an optical recording medium is also described entailing a step for  
 irradiating a multi-pulse light to form a recording mark having a  
 prescribed length of which a recording time = nT (integer n >2, and T =  
 ref. clock); characterized in that the multi-pulse light comprises a pulse  
 train having; (a) a first heating and a cooling pulse; (b) an intermediate  
 heating and a cooling pulse; and (c) a last heating and a cooling pulse;  
 and when a heating pulse time is expressed as Opi and a cooling pulse time  
 is expressed as Fpi such that a first heating pulse time and a head  
 cooling pulse time of the pulse train are resp. expressed by OP1 and FP1,  
 a last heating pulse time and a last cooling pulse time of the pulse train  
 are resp. expressed by OPm and FPM, one or a plurality of an intermediate  
 heating pulse time and an intermediate cooling pulse time of the pulse  
 train are resp. expressed by OPj and FPj (j=2..., m-1 ); wherein the no.  
 of pulse m is equal to L when the length of the prescribed recording mark  
 n is 2L (integer L .gtoreq.2) or 2L + 1 (integer L .gtoreq.1); and the  
 length of each pulse part OPi + FPi (i = 1, ..., m) is substantially two  
 times longer compared to the ref. clock T.

ST optical recording medium method

IT Optical recording

Optical recording materials

Phase change materials

(optical recording medium using phase change materials and recording  
 method)

IT Alloys, uses

RL: DEV (Device component use); USES (Uses)

(recording media; optical recording medium using phase change materials  
 and recording method)

IT 1309-48-4, Magnesium oxide (MgO), uses 13463-67-7, Titanium oxide  
 (TiO2), uses

RL: DEV (Device component use); USES (Uses)  
 (optical recording medium using phase change materials and recording method)

IT 409-21-2, Silicon carbide (SiC), uses 1314-23-4, Zirconium oxide (ZrO2), uses 1314-36-9, Yttrium oxide (Y2O3), uses 1314-98-3, Zinc sulfide (ZnS), uses 7440-21-3, Silicon, uses 7631-86-9, Silica, uses 7704-34-9, Sulfur, uses

RL: DEV (Device component use); USES (Uses)  
 (protection layer; optical recording medium using phase change materials and recording method)

IT 476485-52-6 476485-53-7 476485-54-8 476485-55-9 476485-57-1  
 \*\*\*476485-60-6\*\*\* 476485-62-8 \*\*\*476485-65-1\*\*\* 476485-67-3  
 476485-69-5 \*\*\*476485-71-9\*\*\* 476485-73-1 476485-75-3  
 476485-77-5 476485-79-7 476485-81-1 476485-83-3 476485-85-5  
 476485-87-7 476485-89-9 476485-92-4 476485-94-6 476485-96-8  
 476485-98-0 476486-00-7

RL: DEV (Device component use); USES (Uses)  
 (recording layer; optical recording medium using phase change materials and recording method)

IT 7429-90-5D, Aluminum, alloy 7440-22-4, Silver, uses 476485-51-5

RL: DEV (Device component use); USES (Uses)  
 (reflection layer; optical recording medium using phase change materials and recording method)

L6 ANSWER 15 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:873753 CAPLUS  
 DN 137:377503  
 ED Entered STN: 19 Nov 2002  
 TI Optical recording material using antimony gallium germanium indium tellurium  
 IN Miura, Hiroshi; Suzuki, Eiko; Yuzuhara, Hajime; Tashiro, Hiroko; Harigai, Masato; Kageyama, Yoshiyuki  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS G11B007-24; G11B007-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002331758	A2	20021119	JP 2001-142178	20010511
PRAI JP 2001-142178		20010511		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002331758	ICM	B41M005-26
	ICS	G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]

AB In the material comprising a support coated with 1st dielec. layer, a thin layer contg. Ga, a phase-changeable recording layer, 2nd dielec. layer, and a reflection and heat-radiation layer, the recording layer shows crystn. temp.  $\ltoreq. 190^{\circ}$  and the av. compn. of the thin layer and the recording layer is Ga.alpha.Ge.beta.In.gamma.Sb.delta.Te.epsilon. (0.01. $\ltoreq.$  .alpha.  $\ltoreq. 0.1$ ; 0.01. $\ltoreq.$  .beta.  $\ltoreq. 0.1$ ; 0. $\ltoreq.$  .gamma.  $\ltoreq. 0.1$ ; 0.6. $\ltoreq.$  .delta.  $\ltoreq. 0.85$ ; .epsilon. = 1 - .alpha. - .beta. - .gamma. - .delta. at. ratio). The material shows larger recording capacity than DVD-ROM, high linear velocity and can be initialized easily.

ST optical recording material antimony germanium indium tellurium; gallium thin layer optical recording material

IT Optical recording materials  
 (optical recording material using antimony gallium germanium indium tellurium)

IT Intermetallic compounds

RL: DEV (Device component use); USES (Uses)  
 (optical recording material using antimony gallium germanium indium tellurium)

IT 475475-22-0 \*\*\*475475-26-4\*\*\*  
 RL: DEV (Device component use); FMU (Formation, unclassified); FORM (Formation, nonpreparative); USES (Uses)  
 (initialized phase; optical recording material using antimony gallium germanium indium tellurium)

IT 475475-23-1 475475-24-2 475475-25-3  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)  
 (recording layer; optical recording material using antimony gallium germanium indium tellurium)

IT 245071-53-8  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)  
 (thin layer; optical recording material using antimony gallium germanium indium tellurium)

L6 ANSWER 16 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:728725 CAPLUS  
 DN 137:255447  
 ED Entered STN: 25 Sep 2002  
 TI Rewritable phase-change optical recording medium  
 IN Tashiro, Hiroko; Kageyama, Yoshiyuki; Harigai, Masato; Suzuki, Eiko; Yuzuhara, Hajime; Miura, Hiroshi  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS G11B007-0045; G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 56

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002274042	A2	20020925	JP 2001-80026	20010321
PRAI JP 2001-80026		20010321		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002274042	ICM	B41M005-26
	ICS	G11B007-0045; G11B007-24
	IPCI	B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-24 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-00 [I,C*]; G11B0007-0045 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]

AB The optical recording medium comprises a recording layer mainly contg. Ge.alpha.Ga.beta.Au.gamma.Sb.delta.Te.epsilon. (.alpha. = 1-5, .beta. = 1-5, .gamma. = 1-10, .delta. = 70-81, .epsilon. = 13-24, .alpha. + .beta. + .gamma. + .delta. + .epsilon. = 100). The recording medium is capable of the same or superior high-d. recording as DVD-ROM and DVD-RW at high-speed recording at 8.5-17.5 m/s.

ST rewritable optical disk antimony tellurium alloy; phase change optical disk antimony tellurium alloy

IT Erasable optical disks  
 (rewritable phase-change optical recording medium contg. Sb-Te alloy recording layer)

IT \*\*\*461423-88-1\*\*\* 461423-89-2 \*\*\*461423-90-5\*\*\* 461423-91-6  
 461423-92-7 461423-94-9 461423-95-0 461423-96-1  
 RL: DEV (Device component use); USES (Uses)  
 (in rewritable phase-change optical recording medium contg. Sb-Te alloy recording layer)

IT \*\*\*461423-97-2\*\*\*  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (in rewritable phase-change optical recording medium contg. Sb-Te alloy recording layer)

L6 ANSWER 17 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:556012 CAPLUS  
DN 137:101487  
ED Entered STN: 26 Jul 2002  
TI Phase-change optical information recording medium  
IN Harigaya, Makoto; Tani, Katsuhiko; Iwata, Noriyuki; Ito, Kazunori;  
Yuzurihara, Hajime; Hibino, Eiko; Ohkura, Hiroko; Onagi, Nobuaki; Miura,  
Hiroshi; Kageyama, Yoshiyuki  
PA Ricoh Company, Ltd., Japan  
SO U.S. Pat. Appl. Publ., 9 pp.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM G11B007-24  
INCL 430270130  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002098445	A1	20020725	US 2001-951515	20010914
	US 6790592	B2	20040914		
	JP 2003034081	A2	20030204	JP 2001-275277	20010911
	JP 2003036560	A2	20030207	JP 2001-277126	20010912
PRAI	JP 2000-280225	A	20000914		
	JP 2001-79747	A	20010321		
	JP 2001-143628	A	20010514		
	JP 2001-275277	A	20010911		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002098445	ICM	G11B007-24
	INCL	430270130
	IPCI	G11B0007-24 [ICM,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]
	NCL	430/270.130
JP 2003034081	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]
JP 2003036560	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]

AB The present invention relates to a phase-change optical information recording medium capable of recording information, reproducing recorded information, rewriting recorded information, and erasing recorded information. The phase-change optical information recording medium comprises a recording layer contg. a phase-change recording material including Ge, Ga, Sb, Te, and one element selected from the group consisting of Mg and Ca. The phase-change recording material is capable of performing a reversible phase transition from a noncryst. phase to a cryst. phase and vice verse with the application of an electromagnetic wave.

ST Phase change optical recording disk; Tellurium Germanium Gallium Antimony Magnesium

IT Optical disks  
Optical recording materials  
(phase-change optical information recording medium)

IT Telluride glasses  
RL: DEV (Device component use); USES (Uses)  
(recording layer; phase-change optical information recording medium contg.)

IT 7439-95-4, Magnesium, uses 7440-36-0, Antimony, uses 7440-55-3, Gallium, uses 7440-56-4, Germanium, uses 13494-80-9, Tellurium, uses 442199-93-1 \*\*\*442199-94-2\*\*\* 442199-95-3 442199-96-4  
RL: DEV (Device component use); USES (Uses)  
(telluride glasses; phase-change optical information recording medium contg.)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

(1) Anon; JP 63-147689 1988 CAPLUS  
 (2) Anon; JP 01-227236 1989 CAPLUS  
 (3) Anon; JP 01-241040 1989 CAPLUS  
 (4) Anon; JP 01-267854 1989 CAPLUS  
 (5) Anon; JP 05-229259 1993 CAPLUS  
 (6) Anon; JP 09-020073 1997 CAPLUS  
 (7) Anon; WO 9906220 1999 CAPLUS  
 (8) Anon; EP 1056077 2000 CAPLUS  
 (9) Anon; JP 20-00079761 2000 CAPLUS  
 (10) Anon; JP 20-00313170 2000 CAPLUS  
 (11) Hirotsume; US 6383595 B1 2002  
 (12) Kinoshita; US 5948496 A 1999  
 (13) Kitaura; US 6268034 B1 2001  
 (14) Kojima; US 6416837 B1 2002  
 (15) Miura; US 20020021643 A1 2002 CAPLUS  
 (16) Miyamoto; US 6132932 A 2000 CAPLUS

L6 ANSWER 18 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:253096 CAPLUS

DN 136:286666

ED Entered STN: 05 Apr 2002

TI Optical disk with phase change type SbTe recording layer

IN Yamada, Katsuyuki; Narumi, Shinya; Harigaya, Makoto; Tani, Katsuhiko;  
 Iwata, Noriyuki; Onagi, Nobuaki; Ito, Kazunori; Shibaguchi, Takashi;  
 Hibino, Eiko; Yuzurihara, Hajime; Ohkura, Hiroko; Shimofuku, Akira;  
 Nakamura, Yuki

PA Ricoh Company, Japan

SO Eur. Pat. Appl., 56 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G11B007-00

ICS G11B007-007; G11B007-24; G11B007-26; G11B020-08

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1193696	A2	20020403	EP 2001-123474	20010928
	EP 1193696	A3	20030716		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002225437	A2	20020814	JP 2001-38288	20010215
	US 2002110063	A1	20020815	US 2001-966171	20010928
	JP 2002358691	A2	20021213	JP 2001-304019	20010928
	EP 1467351	A1	20041013	EP 2004-14398	20010928
	R: DE, FR, GB				
	EP 1467352	A1	20041013	EP 2004-14399	20010928
	R: DE, FR, GB				
PRAI	JP 2000-297364	A	20000928		
	JP 2000-310536	A	20001011		
	JP 2000-367361	A	20001201		
	JP 2001-88516	A	20010326		
	EP 2001-123474	A3	20010928		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1193696	ICM	G11B007-00
	ICS	G11B007-007; G11B007-24; G11B007-26; G11B020-08
	IPCI	G11B0007-00 [ICM,6]; G11B0007-007 [ICS,6]; G11B0007-24 [ICS,6]; G11B0007-26 [ICS,6]; G11B0020-08 [ICS,6]
	IPCR	G11B0007-00 [I,C*]; G11B0007-0045 [I,A]; G11B0007-005 [I,A]; G11B0007-006 [I,A]; G11B0007-007 [I,A]; G11B0007-007 [I,C*]; G11B0007-125 [I,A]; G11B0007-125 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-243 [I,A]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]; G11B0019-12 [I,A]; G11B0019-12 [I,C*]; G11B0020-08 [I,A]; G11B0020-08 [I,C*]; G11B0020-10 [I,A]; G11B0020-10 [I,C*]
	ECLA	G11B007/0045P; G11B007/005R; G11B007/006; G11B007/007; G11B007/125C; G11B007/24; G11B007/243; G11B007/26; G11B019/12; G11B020/08; G11B020/10

JP 2002225437 IPCI B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7]; G11B0007-00 [ICS,7,C\*]; G11B0007-125 [ICS,7]; G11B0007-24 [ICS,7]  
 IPCR B41M0005-26 [I,A]; B41M0005-26 [I,C\*]; G11B0007-00 [I,C\*]; G11B0007-0045 [I,A]; G11B0007-125 [I,A]; G11B0007-125 [I,C\*]; G11B0007-24 [I,A]; G11B0007-24 [I,C\*]

US 2002110063 IPCI G11B0007-00  
 IPCR G11B0007-00 [I,C\*]; G11B0007-0045 [I,A]; G11B0007-006 [N,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C\*]; G11B0007-243 [I,A]; G11B0019-12 [I,A]; G11B0019-12 [I,C\*]; G11B0020-08 [I,A]; G11B0020-08 [I,C\*]; G11B0020-10 [I,A]; G11B0020-10 [I,C\*]  
 NCL 369/047.390  
 ECLA G11B007/0045P; G11B007/24; G11B007/243; G11B019/12; G11B020/08; G11B020/10

JP 2002358691 IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-004 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-00 [ICS,7,C\*]; G11B0007-26 [ICS,7]  
 IPCR G11B0007-00 [I,C\*]; G11B0007-004 [I,A]; G11B0007-0045 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C\*]; G11B0007-26 [I,A]; G11B0007-26 [I,C\*]

EP 1467351 IPCI G11B0007-00 [ICM,7]; G11B0007-007 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]; G11B0020-08 [ICS,7]  
 ECLA G11B007/243; G11B020/08

EP 1467352 IPCI G11B0007-00 [ICM,7]; G11B0007-007 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]; G11B0020-08 [ICS,7]  
 ECLA G11B007/243; G11B020/08

AB An optical information recording medium comprises a substrate having concentric circular guide groove stores information that indicates a max. recording linear velocity  $V_h$ . A phase change type SbTe recording layer is formed on the substrate having such a compn. and thickness that a dislocation linear velocity  $V$  satisfies the relation  $V \geq 0.85 V_h$  in particular for a pulse modulation recording method.

ST optical disk phase change recording material antimony tellurium; telluride glass

IT Sputtering  
 (fabrication process of optical disk including)

IT Optical disks  
 (optical disks contg. telluride glass as phase change recording layer)

IT Telluride glasses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (phase change recording layer in optical disk)

IT Coating process  
 (spin; fabrication process of optical disk including)

IT 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-21-3, Silicon, uses 7440-31-5, Tin, uses 7440-69-9, Bismuth, uses 17778-88-0, Nitrogen atom, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (additive element in telluride glass used as phase change recording layer in optical disk)

IT 81207-86-5 384829-31-6 406496-52-4 406496-53-5 406496-54-6  
 406496-55-7 406496-56-8 406496-57-9 406496-58-0 406496-59-1  
 406496-60-4 406496-61-5 406496-62-6 406496-63-7 406496-66-0  
 \*\*\*406496-68-2\*\*\* 406496-69-3 406496-70-6 406496-71-7  
 406496-72-8 406496-73-9 406496-74-0 406496-75-1 406496-76-2  
 406496-77-3 406496-78-4 406496-79-5 406496-80-8 406496-81-9  
 406496-82-0 406496-83-1 406496-84-2 406496-85-3 406496-86-4  
 406496-87-5 406496-88-6 406496-89-7 406496-90-0 406496-91-1  
 406496-92-2 406496-93-3 406496-94-4 406496-95-5 406496-96-6  
 406496-97-7  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (phase change recording layer in optical disk)

IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses 7631-86-9, Silicon dioxide, uses 113443-18-8, Silicon monoxide  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (protection layer in optical disk contg.)

IT 11106-92-6  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (reflection layer in optical disk contg.)

IT 7440-22-4, Silver, uses 7440-36-0, Antimony, uses 7440-55-3, Gallium, uses 7440-56-4, Germanium, uses 7440-74-6, Indium, uses 13494-80-9, Tellurium, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(telluride glass; phase change recording layer in optical disk contg.)

L6 ANSWER 19 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:244561 CAPLUS  
DN 136:270680  
ED Entered STN: 02 Apr 2002  
TI Optical recording material using gallium-antimony-tellurium  
IN Suzuki, Eiko; Ito, Kazunori; Harigai, Masato; Shibaguchi, Takashi;  
Yuzuhara, Hajime; Onagi, Nobuaki; Tashiro, Hiroko  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM B41M005-26  
ICS G11B007-24; G11B007-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002096560	A2	20020402	JP 2000-289128	20000922
PRAI	JP 2000-289128		20000922		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002096560	ICM	B41M005-26
	ICS	G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]

AB In the material using amorphous-crystal phase change by light radiation, .gtoreq.90 at.% of the recording layer comprises GaaSbbTec (0.01.ltoreq. a .ltoreq.0.1; 0.60.ltoreq. b .ltoreq.0.85; c = 1 - a - b). The material is suited for rapid linear and high d. recording, and shows good overwriting property and storage stability.

ST optical recording material gallium antimony tellurium

IT Optical recording materials

(optical recording material using gallium antimony tellurium)

IT 405114-43-4, Antimony 70, gallium 6, tellurium 24 (atomic) 405114-44-5, Antimony 70, gallium 6, silver 3, tellurium 21 (atomic)

\*\*\*405114-45-6\*\*\* , Antimony 70, gallium 6, germanium 3, tellurium 21 (atomic) \*\*\*405114-46-7\*\*\* , Antimony 70, gallium 6, germanium 3, silver 1, tellurium 20 (atomic)

RL: DEV (Device component use); USES (Uses)

(optical recording material using gallium antimony tellurium)

L6 ANSWER 20 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2000:840153 CAPLUS  
DN 134:23573  
ED Entered STN: 01 Dec 2000  
TI Phase change optical recording by divided recording pulses  
IN Nobukuni, Natsuko; Ohno, Takashi; Kubo, Masae; Horie, Michikazu  
PA Mitsubishi Chemical Corporation, Japan  
SO Eur. Pat. Appl., 89 pp.  
CODEN: EPXXDW

DT Patent

LA English

IC ICM G11B007-24

ICS G11B007-26; G11B007-00; G11B007-007; G11B020-12; G11B020-14

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1056077	A2	20001129	EP 2000-110517	20000517
	EP 1056077	A3	20020417		
	EP 1056077	B1	20060510		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO

JP 2001229537	A2	20010824	JP 2000-144959	20000517
JP 2003331424	A2	20031121	JP 2003-114395	20000517
EP 1646043	A1	20060412	EP 2005-28282	20000517
R: DE				
TW 559803	B	20031101	TW 2000-89109642	20000519
US 2004190407	A1	20040930	US 2004-756871	20040113
US 2005207310	A1	20050922	US 2005-132957	20050519
PRAI JP 1999-138066	A	19990519		
JP 1999-263595	A	19990917		
JP 1999-350676	A	19991209		
EP 2000-110517	A3	20000517		
JP 2000-144959	A3	20000517		
US 2000-573319	A3	20000518		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1056077	ICM	G11B007-24
	ICS	G11B007-26; G11B007-00; G11B007-007; G11B020-12; G11B020-14
	IPCI	G11B0007-00 [I,C]; G11B0007-007 [I,C]; G11B0007-24 [I,C]; G11B0007-26 [I,C]; G11B0020-12 [I,C]; G11B0020-14 [I,C]; G11B0007-24 [I,A]; G11B0007-00 [I,A]; G11B0007-007 [I,A]; G11B0007-26 [I,A]; G11B0020-12 [I,A]; G11B0020-14 [I,A]
	IPCR	G11B0007-085 [N,C*]; G11B0007-125 [I,C*]; G11B0027-19 [I,C*]; G11B0027-30 [I,C*]; G11B0007-0045 [N,A]; G11B0007-0055 [N,A]; G11B0007-006 [I,A]; G11B0007-085 [N,A]; G11B0007-125 [I,A]; G11B0007-243 [I,A]; G11B0027-19 [I,A]; G11B0027-30 [I,A]
	ECLA	G11B007/006; G11B007/007; G11B007/125C; G11B007/24; G11B007/243; G11B020/12D8; G11B027/19; G11B027/30C
JP 2001229537	IPCI	G11B0007-0045 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-006 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-24 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-00 [I,C*]; G11B0007-0045 [I,A]; G11B0007-006 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]
JP 2003331424	IPCI	G11B0007-0045 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-005 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-24 [ICS,7]
EP 1646043	IPCI	G11B0007-24 [I,A]; G11B0007-006 [I,A]; G11B0007-00 [I,C*]; G11B0007-007 [I,A]; G11B0007-125 [I,A]; G11B0020-12 [I,A]; G11B0027-19 [I,A]; G11B0027-30 [I,A]
TW 559803	IPCI	G11B0007-24 [ICM,7]
	ECLA	G11B027/30C; G11B007/006; G11B007/007; G11B007/125C; G11B007/24; G11B020/12D8; G11B027/19
US 2004190407	IPCI	G11B0007-00 [ICM,7]
	IPCR	G11B0007-00 [I,C*]; G11B0007-0045 [N,A]; G11B0007-0055 [N,A]; G11B0007-006 [I,A]; G11B0007-007 [I,A]; G11B0007-007 [I,C*]; G11B0007-085 [N,A]; G11B0007-085 [N,C*]; G11B0007-125 [I,A]; G11B0007-125 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-243 [I,A]; G11B0020-12 [I,A]; G11B0020-12 [I,C*]; G11B0020-14 [N,A]; G11B0020-14 [N,C*]; G11B0027-19 [I,A]; G11B0027-19 [I,C*]; G11B0027-30 [I,A]; G11B0027-30 [I,C*]
	NCL	369/047.100
	ECLA	G11B007/006; G11B007/007; G11B007/125C; G11B007/24; G11B007/243; G11B020/12D8; G11B027/19; G11B027/30C
US 2005207310	IPCI	G11B0007-24 [ICM,7]
	IPCR	G11B0007-00 [I,C*]; G11B0007-0045 [N,A]; G11B0007-0055 [N,A]; G11B0007-006 [I,A]; G11B0007-007 [I,A]; G11B0007-007 [I,C*]; G11B0007-085 [N,A]; G11B0007-085 [N,C*]; G11B0007-125 [I,A]; G11B0007-125 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-243 [I,A]; G11B0020-12 [I,A]; G11B0020-12 [I,C*]; G11B0020-14 [N,A]; G11B0020-14 [N,C*]; G11B0027-19 [I,A]; G11B0027-19 [I,C*]; G11B0027-30 [I,A]; G11B0027-30 [I,C*]
	NCL	369/059.110
	ECLA	G11B007/006; G11B007/007; G11B007/125C; G11B007/24;

G11B007/243; G11B020/12D8; G11B027/19; G11B027/30C

AB. In a rewritable compact disk having a wobble groove on a substrate and phase-change recording layer comprising one selected from the compns. represented by MzGey(SbxTel-x)1-y-z (0.1<oreq.Mz.1<oreq.0.1, 0<y.1<oreq.0.1, 0.72.1<oreq.z.1<oreq.0.8; M = metal element selected from Ga, Si, Pb, Pd, etc.) or by AlaA2bGec(SbdTel-a-b-c (0<a.1<oreq.0.1, o<b.1<oreq.0.1, c<b<a, 0.02<c.1<oreq.0.2, 0.72.1<oreq.d.1<oreq.0.8; A1 = metal element selected from Zn, Pd, Pt, V, Nb, etc.; A2 = Ga, In)). Recording at 8-times or higher velocities is realized by a divided pulse method without any risk of impairing the read-compatibility with the conventional CD-RW specifications at least at 4-times velocity.

ST phase change optical recording app

IT Optical memory devices

Optical recording

(phase change optical recording by divided recording pulses)

IT 260979-96-2, Antimony 73, germanium 5, tellurium 22 (atomic)

260980-00-5, Antimony 71, germanium 5, indium 3, tellurium 21 (atomic)

309729-08-6, Antimony 66, germanium 5, indium 8, tellurium 21 (atomic)

\*\*\*309729-09-7\*\*\* , Antimony 68, gallium 5, germanium 5, tellurium 22 (atomic)

309729-10-0, Antimony 72, germanium 5, indium 3, tellurium 20 (atomic)

RL: DEV (Device component use); USES (Uses)

(phase change optical recording by divided recording pulses)

IT 178255-68-0, Silicon zinc oxide sulfide (Si0.1Zn0.4O0.2S0.4)

RL: DEV (Device component use); USES (Uses)

(protective layer; phase change optical recording by divided recording pulses)

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(FILE 'HOME' ENTERED AT 11:50:30 ON 30 MAY 2006)

FILE 'REGISTRY' ENTERED AT 11:50:36 ON 30 MAY 2006

L1 2918 S GA 2-6/MAC

L2 4550 S GE 1-6/MAC

L3 1376 S SB 70-83/MAC

L4 2057 S TE 5-27/MAC

L5 31 S L1 AND L2 AND L3 AND L4

FILE 'CAPLUS' ENTERED AT 11:51:40 ON 30 MAY 2006

L6 20 S L5

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	61.86	81.99
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-15.00	-15.00

STN INTERNATIONAL LOGOFF AT 11:52:09 ON 30 MAY 2006